

## The powerful preparation system for high quality specimen preparation

The Tegramin preparation system elegantly combines ease of use with advanced functionality. Innovative solutions improve preparation results and help you deal with a variety of specimens or materials, or high specimen volume.

### Three system sizes

Tegramin is available for three different disc sizes: Tegramin-30 for 300 mm discs, Tegramin-25 for 250 mm discs and Tegramin-20 for 200 mm discs.

### Variable speed of disc and specimen mover head

Tegramin is equipped with variable disc speed of 40-600 rpm and variable specimen mover head speed of 50-150 rpm. This allows for preparation of very sensitive materials at low speed, as well as fast preparation with high material removal at higher speeds.

### High preparation capacity

On Tegramin-30: up to 6 individual specimens of 50 mm dia. and specimen holders size 160 mm or 200 mm dia.

On Tegramin-25: up to 6 individual specimens of 40 mm dia. or 3 individual specimens of 50 mm dia. and specimen holders size 140 mm or 160 mm dia.

On Tegramin-20: up to 4 individual specimens of 40 mm dia.

**Easy insertion and removal of specimens**

**Intuitive user interface**

**Easy cleaning with removable bowl liner and bowl flush**

**Cover for improved safety**

**Perfect preparation results with precise force control**

**Methods database and automatic dosing ensure reproducibility**

**Disc cooling on Tegramin-30 and Tegramin-25 reduces consumables consumption**

## Sturdy and durable design

The entire base which is made of an AlSiMg alloy with high mechanical strength and chemical resistance, guarantees life-long durability.

### Dual column construction

On the cast base, a sturdy construction carrying the specimen mover head is fixed. The up/down movement is based on two strong columns making the entire systems as solid as possible. This has a very positive effect on specimen planeness and noise during preparation.

### MD-Disc with cone

It is very easy to remove the MD-Disc and it allows therefore the fast exchange of the bowl liner. It has a higher mass than the traditional MD-Disc so it also keeps the temperature of the preparation surface lower and can easier be cooled down using the disc cooling function.

### Easy cleaning with removable bowl liner

A bowl liner that fits precisely into the bowl collects all debris that are not washed down the drain. When the machine has to be cleaned, the bowl liner can easily be removed. It can then either be cleaned or discarded.

### Bowl flushing

To further facilitate cleaning, Tegramin-30 and -25 are equipped with a bowl flush function. While the disc is rotating, disc cooling is activated. The water that is sprayed on the bottom of the MD-Disc is distributed to the walls of the bowl, washing away loose debris.

### Spin function for cleaning and drying

By holding the disc key down the disc will spin up to maximum speed and thus all excess water after cleaning will be removed from the MD-Disc or the preparation surface.



## Improved working area

### Cover to encase the preparation area

As an option, a transparent cover that encloses the entire preparation area, is available. The cover offers several advantages: when alcohol-based consumables are used, all the fumes are contained within the cover. The cover can be connected to an exhaust and all fumes can be removed without any personal exposure.

When the cover is closed, the user cannot get in contact with any rotating parts and personal safety is improved. When the cover is mounted, the Tegramin cannot be started when the cover is open (unless manual preparation has been selected). The machine will also stop if the cover is opened while a preparation step is running.

### Possibility to connect a recirculation cooling unit

One of Struers' recirculation cooling systems can be connected to Tegramin. This is especially useful to collect grinding debris and to avoid blocking the draining system in the lab. It is also very useful when water is scarce or when there simply is no water connection nearby.

### Shift valve to use both recirculation and tap water

For the first time with a table top machine it is possible to connect both tap water and a recirculation cooling system at the same time. Water from the recirculation system can be used for grinding; for the OP-polishing step, where absolutely clean water is a must, tap water is used.

The shift valve is activated automatically to direct the waste water in the correct direction to avoid overfilling or emptying of the recirculation cooling unit.



**180° rotation of specimen mover head**  
One touch of the key rotates the plate 180° and facilitates insertion of the specimens

## Easy specimen handling and operation

### Preparation of individual specimens and specimen holders

Tegramin-30 and -25 are designed for preparation of both individual specimens and specimens clamped in holders. Simply switch between the two possibilities and insert either a specimen holder or a specimen mover disc to run the required method. Thus all options are covered. Tegramin-20 is for preparation of individual specimens only.

### Specimen mover head stopping again at start position

The specimen mover head is always stopping at the exact same position it was started at. This makes it easier to insert and remove the specimen holder or specimen mover disc as the black release button always is in the same position. It also makes it easier to identify individual specimens as they start and stop exactly in the same position.

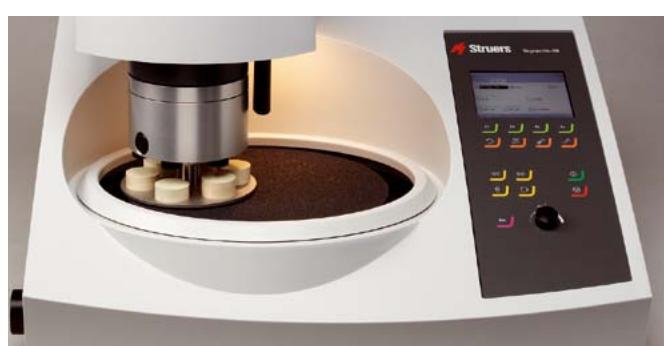
### Easy insertion and removal of specimens

Tegramin is equipped with a key to rotate the specimen mover plate automatically. One touch of the key rotates the plate 180° and facilitates insertion and removal of the specimens.

### Motorized horizontal positioning of specimen mover head on Tegramin-30 and -25

It is possible to adjust the specimen mover head position relatively to the preparation disc. The centre lines of both discs are identical, so depending on the diameter of the specimen holder or mover disc it can be moved left or right for the best possible utilization of the preparation surface.

On Tegramin-20 the position is adjusted manually.



Emergency stop, for immediate stopping of all moving parts in case of an emergency.

LED light illuminates the entire preparation area and makes it easy to follow the preparation process. The LED's have a very long lifetime and low power consumption.

Large colour display. This allows showing all parameters of a preparation step in an easy-to-read-way and makes manoeuvring uncomplicated and user-friendly.

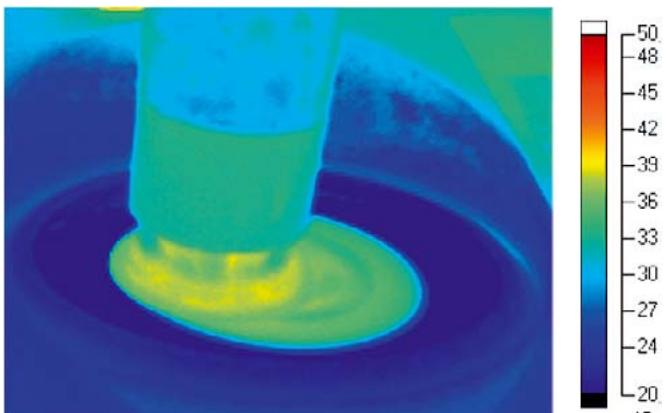
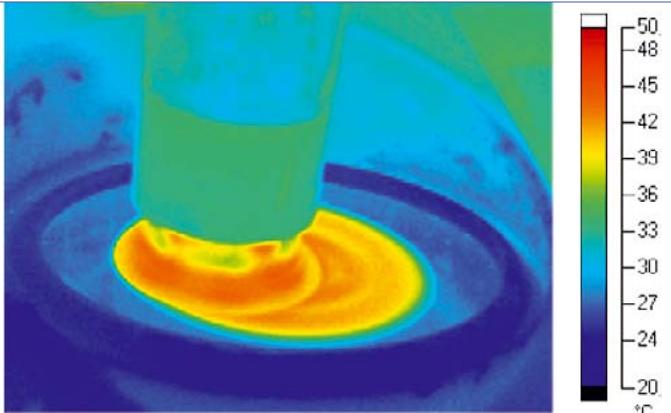
This turn/push knob facilitates and speeds up the entire machine operation and programming.

## Keep surface temperature low

### Disc cooling on Tegramin-30 and Tegramin-25

Underneath the MD-Disc, a nozzle can be opened to apply water to the backside of the disc and thus reduce the temperature increase, that can occur during preparation, by up to 20°C. The thermographic images indicate some of the difference. With the disc cooling function the temperature of the preparation surface is kept low. This is particular relevant for high volume preparation and will not only improve preparation quality, but also keep consumption of suspensions and/or lubricants down.

As Tegramin-20 is designed for smaller volumes this feature is not necessary.



## Perfect preparation results

### Precise force control

It is possible to start with a force as low as 5 N per specimen. This is used for small or sensitive specimens to avoid damage during grinding and polishing.

### Automatic locking of specimen mover plates

After the specimen mover plate has been moved into the correct position over the preparation surface, the coupling is locked inside the specimen mover head. The possible small movements of the specimen mover disc are now avoided completely, and the result is a tremendous improvement in specimen planeness. On Tegramin-20 the specimen mover plate is loaded in place with a individual screw.

### Soft start and stop

Both the start and stop sequence of a preparation step are controlled precisely. The force is increased and decreased gradually, and the speed of both preparation disc and speci-

men mover plate is ramped up and down at predefined "angles" to get the best possible preparation result without the risk of damaging the specimen because of preferential grinding.

### Direction of preparation head

The rotational direction of the head can be set to either clockwise or to counter-clockwise. Normal preparation is always carried out using the counter-clockwise movement, i.e. same as the disc movement for the best possible dynamic relations. For special applications and for polishing with oxide polishing suspensions, the rotation is changed to clockwise to keep the suspension better on the disc.

### Removal measurement on specimen holders

A built-in removal sensor allows for the measurement of material removal in the range from 50 - 5,000 µm. Instead of relying on preparation time, especially when grinding various numbers of specimens, the necessary amount of material to be removed can be specified. This guarantees the shortest possible grinding time while ensuring that sufficient material has been removed.

### Slow rotation while pre-dosing

When a preparation step is started, the first few seconds are normally used for pre-dosing. During this time the disc is turning slowly for a more equal distribution of the suspension or lubricant and to avoid the liquid to be thrown off the disc.





Tegramin has an automatic level calculation that will inform the user when the level in one of the bottles gets too low.

## Convenient automatic dosing

### Increase reproducibility

Automatic dosing of consumables ensures that a controlled amount is applied every time. This greatly increases reproducibility and keeps consumables consumption under control.

### Different dosing modules available

Three different dosing modules are available for Tegramin: A module with one pump for DP-Suspension or lubricant, a module with two pumps for DP-Suspensions or lubricants, and one module with two pumps for DP-Suspensions or lubricants and one pump with water connection for OP-Suspensions. These modules can be combined in various ways, opening for many different combination possibilities and up to 7 pumps in total.

### Manual preparation with automatic dosing and timer function

It is possible to select manual preparation. In this menu it is possible to display the preparation surface to be used and to program the lubricant and/or suspension to be used together with the dosing level and the preparation time. After pressing start, dosing will start automatically and the disc will stop as soon as the preset time has expired. This allows e.g. for a controlled, short manual re-polishing of specimens after etching.

### Automatic level calculation

It can be difficult to see the level in all bottles when they are placed in the bottle tray. Tegramin has an automatic level calculation so when a lubricant or suspension is filled into a bottle, the volume that is in the bottle can be specified in the bottle configuration.

### Sniff function when dosing DP-Suspensions and lubricants

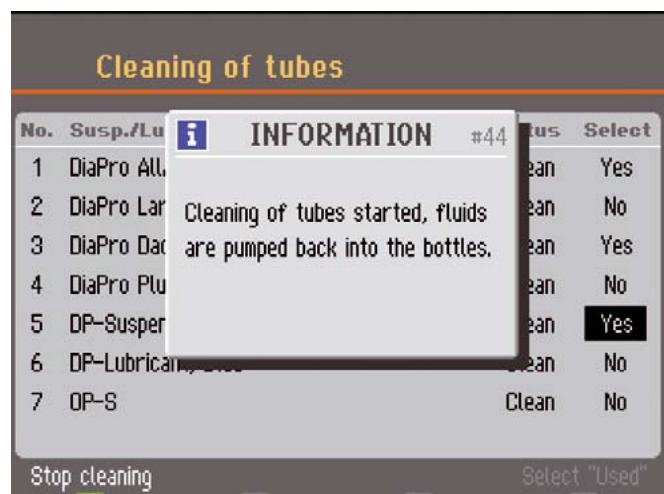
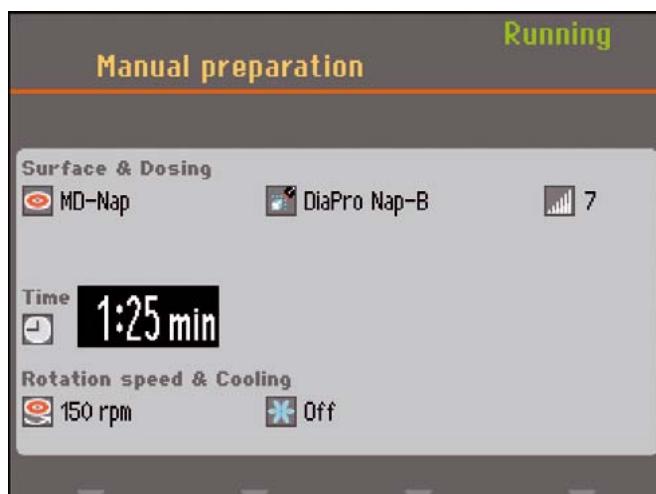
At the end of every preparation step the pump(s) used during that step reverse slightly to retract the suspension or lubricant from the dosing nozzle. This eliminates the risk of contamination at a later step from coarse abrasive on a finer grain size step.

### Cleaning function for all tubes

The software contains a built-in cleaning routine for cleaning all the tubes for suspensions and lubricants. Tegramin monitors which suspensions and thus which pumps/tubes have been used and offers the possibility to clean just the tubes with the status "Used". It is also possible to select any tube for cleaning independently. Messages on the display tell exactly what to do and at the end of the operation the selected tubes are clean and ready for e.g. a change to a different grain size.

### Automatic tube cleaning after OP polishing

At the end of the OP-polishing step the force is reduced to the lowest possible value, the rotation changed from counter- to co-rotation and a water valve is opened directly after the peristaltic pump. That means that the tube is flushed completely, all OP-Suspension is removed and at the same time both polishing cloth and specimens are cleaned as well. Therefore no chemical attack will take place after the OP-step is finished. At the very end of the step the pump will reverse to also replace the OP-Suspension between pump and bottle with water. Thus there is no risk of clogging tubes whatsoever.



## Calibration of pump capacity

Calibration item	Calibration value
Dosing pump 1:	50.5 ml/min
Dosing pump 2:	53.0 ml/min
Dosing pump 3:	53.8 ml/min
Dosing pump 4:	52.4 ml/min
Dosing pump 5:	51.7 ml/min
Dosing pump 6:	53.0 ml/min
Dosing pump 7:	92.0 ml/min
Pump time:	60 s
Start	

### Built-in pump calibration

Tegramin is equipped with a calibration function that ensures constant dosing levels throughout the entire lifetime of the machine. At regular intervals a calibration routine can be carried out, and the actual pump capacity is measured. After the measurement the individual pump values are entered into the software, and the correct dosing levels are calculated based on these values. Thus any method will always produce the same preparation result.

## Preparation methods ensure reproducibility and consistency

### Increase reproducibility

Consistent preparation procedures are required to ensure repeatability and reproducibility. Tegramin includes a method database able to store as many as 200 preparation methods.

### Start right away

Tegramin includes 10 Struers Metalog Guide methods which cover all major material groups. They are developed for maximum performance of the Tegramin and allow you to get started right away. They also provide an excellent starting point for development of your own methods.

Ferrous metals			
Steel			
Surface	Suspension	Lub.	Time/µm
1 Piano 220		Water	1:00 min
2 Allegro	DiaP. All/Lar.		0:10 min
3 Allegro	DiaP. All/Lar.		2:10 min
4 Allegro	DiaP. All/Lar.		0:10 min
5 Dac	DiaP. Dac		3:00 min
6 Chem	OP-AA		2:00 min
7 New step			

Copy step   Insert step   Delete step   Save functions

### Automatic combination of preparation steps with same surface and suspension/lubricant

In some cases, it can be an advantage to divide a preparation step into two or three sub-steps with e.g. different force or

dosing levels for even more reliable and fast specimen preparation. Tegramin automatically recognises steps as sub-steps when the same preparation surface and lubricant / suspension are used. It will therefore run these steps in succession, without any user-intervention. This function can be un-selected when SiC Papers are used, as here often several steps are created to allow the change of worn papers.



### Different user-levels

Three different user-levels can be set: Production, Development and Configuration. This allows for the lab manager to configure the machine and develop preparation methods. When the user level then is changed to Production, only a few necessary parameters can be changed while the rest is locked to avoid changes to the preparation result.



A wide range of specimen mover plates are available for Tegramin.



Technical data		Tegramin-20	Tegramin-25	Tegramin-30		
Disc	Diameter	200 mm / 8"	250 mm / 10"	300 mm / 12"		
	Speed	40-600 rpm, variable in steps of 10				
	Rotational direction	Counter-clockwise				
	Motor power continuous / max	370 / 555 W / 0.5 / 0.75 HP	750 / 1125 W / 1.0 / 1.5 HP			
Head	Torque at disc	11.8 Nm / 8.7 ft-lbf 5.9 Nm / 4.4 ft-lbf > 18 Nm / 13.3 ft-lbf	23.8 Nm / 17.6 ft-lbf 11.9 Nm / 8.8 ft-lbf > 40 Nm / 29.6 ft-lbf			
	Cont. at <300 rpm					
	Cont. at 600 rpm					
	Max.					
Software and electronics	Speed	50-150 rpm, variable in steps of 10				
	Rotational direction	Clockwise, counter-clockwise				
	Force	Individual specimens: 5-50 N	Specimen holder: 30-300 N Individual specimens: 5-50 N	Specimen holder: 30-400 N Individual specimens: 5-65 N		
	Motor	120 W		160 W		
Safety	Torque	7.5 Nm / 5.6 ft-lbf		10.2 Nm / 7.6 ft-lbf		
	Controls	Touch pad and turn/push knob				
	Memory	FLASH-ROM / RAM / NV-RAM				
	LC Display	TFT-colour 320x240 dots with LED back light				
Stop Mechanisms Designed to comply with:	Emergency stop	EN60204-1, Stop Category 0 EN954-1, Category 2				
	Cover	EN60204-1, Stop Category 2 EN954-1, Category B				
Noise level	At idle running, at a distance 1.0 m / 39.4" from the machine	47 dBA				
	During preparation	Polishing 54 dBA, Grinding 56 dBA				
Surrounding temperature		5-40°C / 41-104°F				
Humidity		0-95% RH				
Supply	Voltage / frequency	200-240 V / 50-60 Hz				
	Power inlet	1-phase (N+L1+PE) or 2-phase (L1+L2+PE) The electrical installation must comply with "Installation Category II".				
	Power, nominal load	680 W	1060 W			
	Power, idle	9 W	13 W			
	Current, nom.	3.4 A	5.3 A			
	Current, max.	6.3 A	10 A			
	Pressure for tap water	1-10 bar / 14.5-145 psi				
	Water inlet	13 mm or 19 mm / ½" or ¾"				
	Water outlet	ø30 mm / 1¼"	ø40 mm / 1½"			
	Air inlet	ø6 mm / ¼"				
"Exhaust" (with Cover only)	Air pressure	6-10 bar / 86-145 psi				
	Air quality	The air supplied must be of Class-3 or better, as specified in ISO 8573-1.				
Dimensions and weight (without Cover)	Dimension	ø50 mm / 2" Recommended capacity for exhaust system: 180m³/h at 0mm water gauge.				
	Width	60 cm / 23.6"	67.5 cm / 26.6"			
	Depth	65 cm / 25.6"	75 cm / 29.5"			
	Height	48 cm / 18.9"	56 cm / 22"			
Dimensions and weight (with Cover)	Weight	52.5 kg / 116 lbs	90 kg / 198 lb			
	Width	60 cm / 23.6"	67.5 cm / 26.6"			
	Depth	65 cm / 25.6"	75 cm / 29.5"			
	Height (cover closed/open)	50 cm / 19.7" / 85 cm / 33.5"	58.2 cm / 22.9" / 90 cm / 35.4"			
Weight		58 kg / 128 lbs	98 kg / 216 lb			

Struers' equipment is in conformity with the provisions of the applicable International Directives and their appurtenant Standards (please contact your local supplier for details).

Struers' products are subject to constant product development. Therefore, we reserve the right to introduce changes in our products without notice.

## Specifications

	Cat. no:
<b>Tegramin-30</b> Automatic, microprocessor controlled machine for grinding and polishing of specimens on 300 mm MD-Disc with cone. Dosing modules, MD-Disc with cone and specimen holders are ordered separately.	06036127
<b>Tegramin-30 with cover</b> Automatic, microprocessor controlled machine for grinding and polishing of specimens on 300 mm MD-Disc with cone. With transparent cover. Dosing modules, MD-Disc with cone and specimen holders are ordered separately.	06036227
<b>Tegramin-25</b> Automatic, microprocessor controlled machine for grinding and polishing of specimens on 250 mm MD-Disc with cone. Dosing modules, MD-Disc with cone and specimen holders are ordered separately.	06026127
<b>Tegramin-25 with cover</b> Automatic, microprocessor controlled machine for grinding and polishing of specimens on 250 mm MD-Disc with cone. With transparent cover. Dosing modules, MD-Disc with cone and specimen holders are ordered separately.	06026227
<b>Tegramin-20</b> Automatic, microprocessor controlled machine for grinding and polishing of specimens on 200 mm MD-Disc with cone. Dosing modules, MD-Disc with cone and specimen holder's are ordered separately.	06016127
<b>Tegramin-20 with cover</b> Automatic, microprocessor controlled machine for grinding and polishing of specimens on 200 mm MD-Disc with cone. With transparent cover. Dosing modules, MD-Disc with cone and specimen holder's are ordered separately.	06016227
<b>Tegramin Dosing Module with 1 DP pump</b> To be installed on Tegramin-30 / -25 or -20. With one pump for diamond suspensions or lubricants.	06036900
<b>Tegramin Dosing Module with 2 DP pumps</b> To be installed on Tegramin-30 / -25 or -20. With two pumps for diamond suspensions or lubricants.	06036901
<b>Tegramin Dosing Module with 2 DP and 1 OP pump</b> To be installed on Tegramin-30 / -25 or -20. With two pumps for diamond suspensions or lubricants and one pump for OP suspensions.	06036902
<b>Bottle tray for Tegramin.</b> With space for six ½ l bottles and one 1l bottle. To be used with Tegramin-30 / -25 or -20.	06036910
<b>Preparation Discs</b>	06086403
MD-Disc with cone for Tegramin-30, 300 mm dia.	06086402
MD-Disc with cone for Tegramin-25, 250 mm dia.	06086401
MD-Disc with cone for Tegramin-20, 200 mm dia	06086401
<b>Cover</b>	06036903
Transparent cover for Tegramin-25/-30	06016903
Transparent cover for Tegramin-20	06016903
<b>Lid</b>	06036906
For Tegramin-25 and Tegramin-30	06016906
For Tegramin-20	06016906
<b>Splash guard for manual preparation</b>	06036905
For Tegramin-30	06026905
For Tegramin-25	06016905
For Tegramin-20	06016905
<b>Disposable bowl liner</b>	49900052
For Tegramin-25 / -30. 5 pcs.	49900056
For Tegramin-20. 5 pcs.	49900056
<b>Shift valve for Tegramin</b>	06036904
For recirculation cooling unit (05766xxx) or drain.	06036904
<b>Struers Cooling Unit, System 3.</b> With 50 l tank, small pump, Cooli-1, 50 l static filter with filter paper.	
1 x 100 V / 50 Hz	05766516
1 x 220-240 V / 50 Hz	05766522
1 x 100-120 V / 60 Hz	05766523
1 x 220-240 V / 60 Hz	05766524
1 x 100-120 V / 50-60 Hz CSA	05766616
<b>Levelling device.</b> For levelling of specimens in specimen holders (ø 140 mm)	05256903
<b>Levelling device, Uniforce.</b> For levelling of specimens in specimen holders ø 140, 160 and 200 mm.	04886101
With pressure foot for positioning of specimens	04886102
<b>Coupling</b>	06086901
For Tegramin-30 and Tegramin-25 specimen mover plates.	06086900
For Tegramin-20 specimen mover plates.	06086900
<b>Specimen mover plates, for individual specimens</b>	
	<b>For Tegramin-25</b>
Without holes	06086906
For 6 specimens 25 mm dia.	06086902
For 6 specimens 1" dia.	06086909
For 6 specimens 30 mm dia.	06086903
For 6 specimens 1¼" dia.	06086910
For 6 specimens 1½" dia.	06086911
For 6 specimens 40 mm dia.	06086904
For 3 specimens 50 mm dia.	06086905
For 6 specimens 50 mm dia.	-
For Accustop 30	06086907
For Accustop 40	06086938
<b>Specimen mover plates for Tegramin-20, for individual specimens</b>	
	<b>For Tegramin-30</b>
For 4 x 25 mm dia.	06086912
For 4 x 30 mm dia.	06086913
For 4 x 40 mm dia	06086914
For 4 x 1" dia.	06086915
For 4 x 1¼" dia.	06086916
For 4 x 1½" dia.	06086917



Struers A/S  
Pederstrupvej 84  
DK-2750 Ballerup,  
Denmark  
Phone +45 44 600 800  
Fax +45 44 600 801  
struers@struers.dk  
www.struers.com

<b>AUSTRALIA &amp; NEW ZEALAND</b> <b>Struers Australia</b> 27 Mayneview Street Milton QLD 4064 Australia Phone +61 7 3512 9600 Fax +61 7 3369 8200 info.au@struers.dk	<b>NETHERLANDS</b> <b>Struers GmbH Nederland</b> Elektraweg 5 3144 CB Maassluis Telefoon +31 (10) 599 7209 Fax +31 (10) 5997201 netherlands@struers.de
<b>ÖSTERREICH</b> <b>Struers GmbH</b> Zweigniederlassung Österreich Betriebsgebäude Puch Nord 8 5412 Puch Telefon +43 6245 70567 Fax +43 6245 70567-8 austria@struers.de	
<b>POLAND</b> <b>Struers Sp. z o.o.</b> Oddział w Polsce ul. Jasnogórskas 44 31-358 Kraków Telefon +48 12 661 20 60 Fax +48 12 626 01 46 poland@struers.de	
<b>ROMANIA</b> <b>Struers GmbH</b> Sucursala Sibiu Str. Scăala de Inot, nr. 18 RO-55000 Sibiu Phone +40 269 244 558 Fax +40 269 244 559 romania@struers.de	
<b>CHINA</b> <b>Struers Ltd.</b> No. 1696 Zhang Heng Road Zhang Jiang Hi-Tech Park Shanghai 201203, P.R. China Phone +86 (21) 6035 3900 Fax +86 (21) 6035 3999 struers@struers.cn	<b>SCHWEIZ</b> <b>Struers GmbH</b> Zweigniederlassung Schweiz Weissenbrennenstrasse 41 CH-8903 Birmensdorf Telefon +41 44 777 63 07 Fax +41 44 777 63 09 switzerland@struers.de
<b>CZECH REPUBLIC</b> <b>Struers GmbH</b> Organizační složka Havlíčkova 361 CZ-252 63 Roztoky u Prahy Phone +420 233 312 625 Fax +420 233 312 640 czechrepublic@struers.de	
<b>SINGAPORE</b> <b>Struers Singapore</b> 627A Aljunied Road, #07-08 BizTech Centre Singapore 389842 Phone +65 6299 2268 Fax +65 6299 2661 struers.sg@struers.dk	
<b>DEUTSCHLAND</b> <b>Struers GmbH</b> Carl-Friedrich-Benz-Straße 5 D-47877 Wüllich Telefon +49 (0) 2154 486-0 Fax +49 (0) 2154 486-222 verkauf@struers.de	<b>SUOMI</b> <b>Struers Suomi</b> Kalevantie 43 00180 Helsinki Puhelin +358 (0)207 919 430 Faksi +358 (0)207 919 431 finland@struers.fi
<b>FRANCE</b> <b>Struers S.A.S.</b> 37, rue du Marché Rollay F-94507 Champigny sur Marne Cedex Téléphone +33 1 5509 1430 Télécopie +33 1 5509 1449 struers@struers.fr	<b>SWEDEN</b> <b>Struers Sverige</b> Ekbacksvägen 22 168 69 Bromma Telefon +46 (0)8 447 53 90 Telefax +46 (0)8 447 53 99 info@struers.se
<b>IRELAND</b> <b>Struers Ltd.</b> Unit 1 Evolution@ AMP Whittle Way, Catcliffe Rotherham S60 5BL Tel. +44 0845 604 6664 Fax +44 0845 604 6651 info@struers.co.uk	<b>UNITED KINGDOM</b> <b>Struers Ltd.</b> Unit 1 Evolution @ AMP Whittle Way, Catcliffe Rotherham S60 5BL Tel. +44 0845 604 6664 Fax +44 0845 604 6651 info@struers.co.uk
<b>ITALY</b> <b>Struers Italia</b> Via Monte Grappa 80/4 20020 Arese (MI) Tel. +39-02/38236281 Fax +39-02/38236274 struers.it@struers.it	<b>USA</b> <b>Struers Inc.</b> 24766 Detroit Road Westlake, OH 44145-1598 Phone +1 440 871 0071 Fax +1 440 871 8188 info@struers.com
<b>JAPAN</b> <b>Marumoto Struers K.K.</b> Takara 3rd Building 18-6, Higashi Ueno 1-chome Taito-ku, Tokyo 110-0015 Phone +81 3 5688 2914 Fax +81 3 5688 2927 struers.jp@struers.co.jp	